

Exam.Code:0925

Sub. Code: 6868

2031

B.E. (Information Technology)

Seventh Semester

IT-702: Machine Learning

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) What is the trade-off between bias and variance?
- b) What are the applications of supervised machine learning in modern business?
- c) What is imbalanced dataset? How would you handle it?
- d) What is Fi score? Explain its significance.
- e) What is a confusion matrix and why do you need it? (5x2)

UNIT - I

- II. a) What is the difference between AI and Machine Learning? Explain briefly the different types of machine learning.
- b) Explain the difference between Normalization and Standardization. (8,2)
- III. a) What is the difference between linear and logistic regression? Explain using example.
- b) Explain Gaussian parameter estimation and maximum likelihood estimation in generative learning. (5,5)
- IV. a) What is perceptron and Multilayer perceptron? List some real-time applications of Artificial Neural Networks.
- b) What are the kernels in SVM? Explain popular kernels used in SVM along with a scenario of their applications. (5,5)

UNIT - II

- V. a) What is Bayes Theorem? Explain using example.
- b) What do you understand by graphical models in machine learning? Explain any two graphical models. (4,6)

P.T.O.

(2)

- VI. What is k-means clustering algorithm for unsupervised learning and how it is different from KNN algorithm? Explain using example in detail. (10)
- VII. a) What are outliers? Explain any three methods to deal with outliers.
b) What do you understand by curse of dimensionality? Explain Linear Discriminant Analysis (LDA) for feature extraction. (5,5)

x-x-x